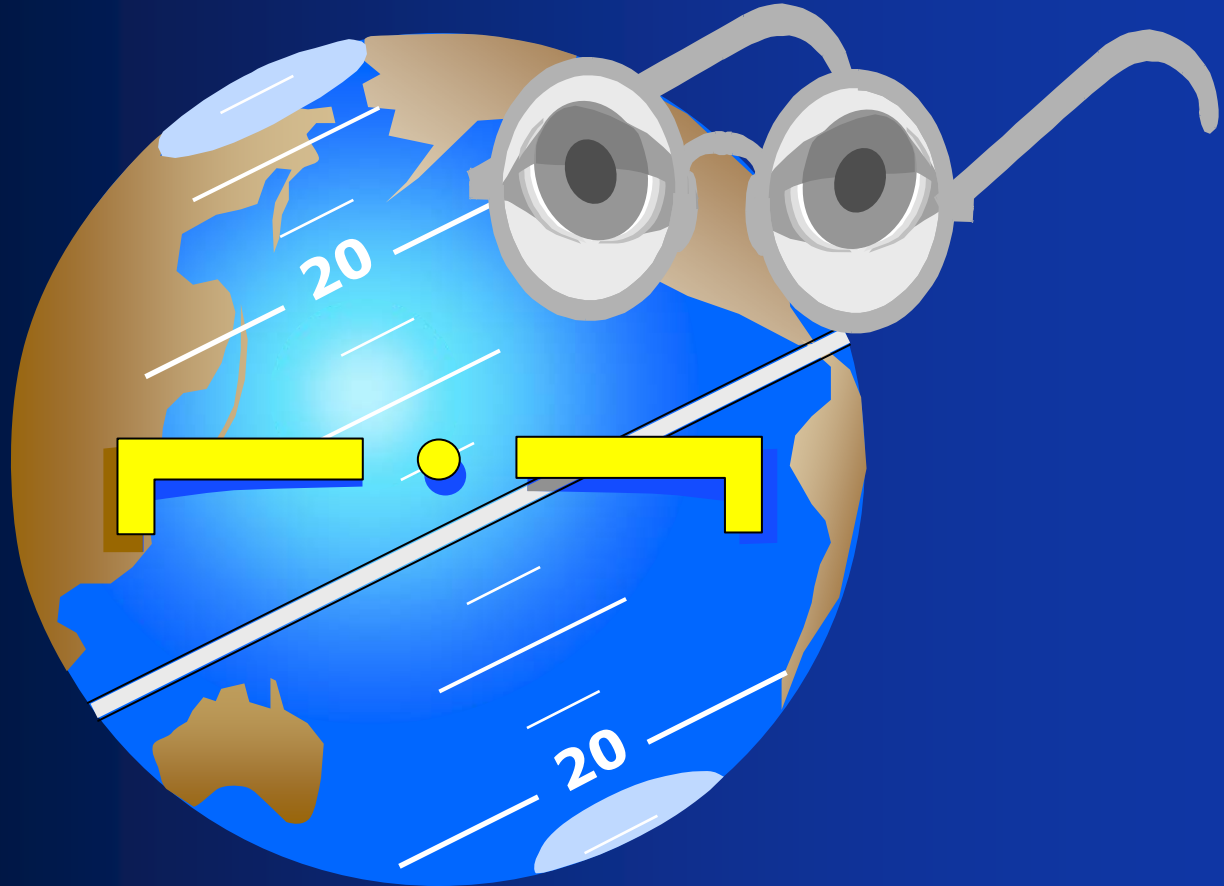# 2020 Vision (in ten minutes)
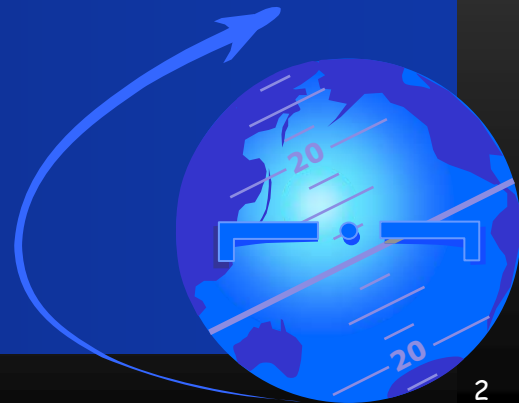
METHODOLOGY

- Met and Shared

- Brainstormed Assumptions

- Agreed on (a few) ConOps Issues

NAS ASSUMPTIONS

- NAS will be more self-aware than now
- Ground to space based nav system transformation occurring
- Better weather forecasts - 2 hour lead time to 90% accuracy
- Dynamic resectorization exists
- Weather, traffic and Airspace awareness in cockpit will become essential
- AOC plays increasing role in ATM environment
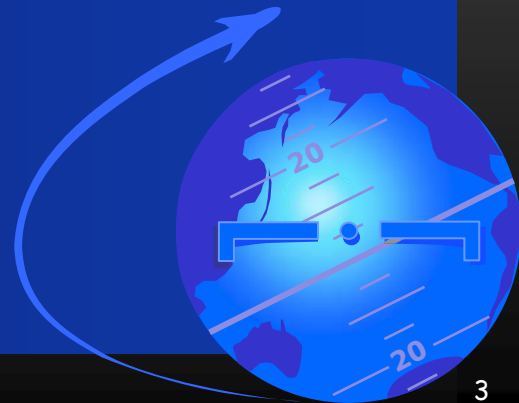
ATM ASSUMPTIONS

- Move from Tactical to Strategic ATC (ATM)
- Moving toward ADS-B, but radar is still present and will be into...
- Some kind of EFR exists
- Self-separation exists at some level, but not pervasive
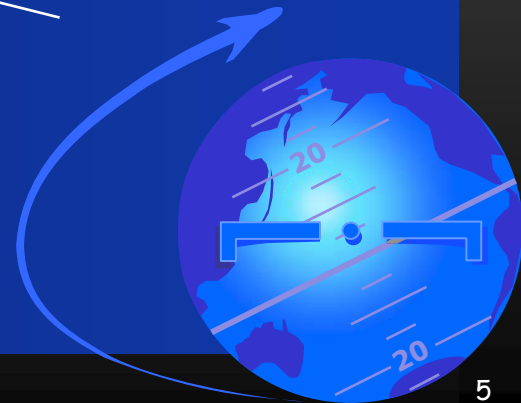- No European "One Sky" yet
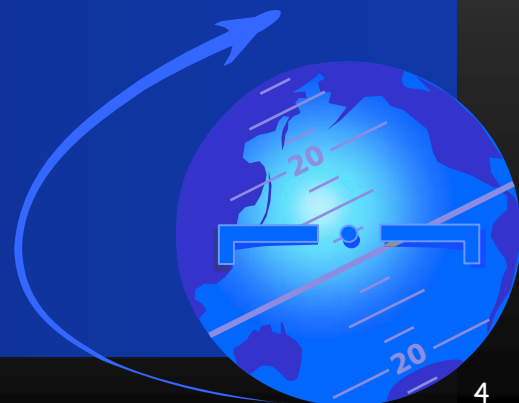
HUB ASSUMPTIONS

- RLV operations
- Fortress Hubs
- Regional Hubs
- Municipal Hubs
- Rural
- Others

COMM

RJs

Frac/SATS

OTHER ASSUMPTIONS

- Still hungry for bandwidth, and it is still limiting

- Point to point is the driver

- Environmental concerns are increasing constraints

- AC mix is increased to rotorcraft, etc., but SATS operations are more prevalent

- UAVs

- In ten years, we'll HAVE TO KNOW what we want for 20 years from now...

CONCEPT
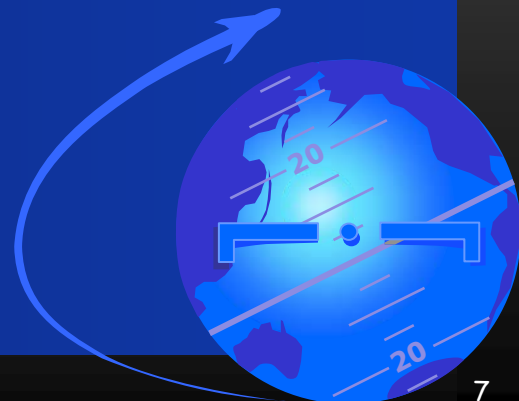
- DATA --> INFO --> KNOWLEDGE management

- OPTIMIZATION
  - System?
  - Individual?

- BALANCING
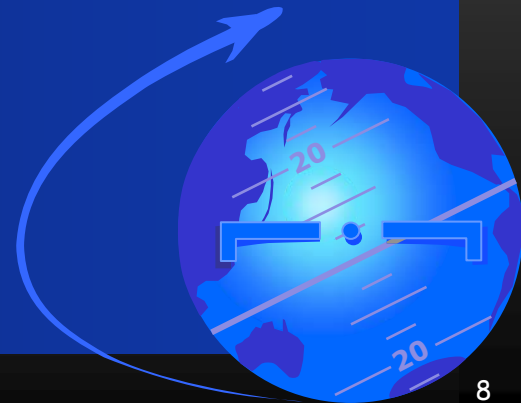 - Who goes first?
  - Dynamic management

CONCEPT

- Dipping into existing capacity...

- Interline Alliances...

- AOC
  - Enhanced role
  - Intermodal issues

CONCEPT

- Dynamic resectorization no longer geographically constrained

- HUB RTAs combined with FMS arrivals, CDTI, and distributed awareness

- Needs INCENTIVIZATION for equipage - from commercial to GA

CONCLUSIONS

- It will take 20 years to get there...
- ***Dynamic*** collaboration is going to play a huge role
- Requires low cost, combined avionics within 10 years to hit a 20 year horizon
- Requires more than just aviation to ensure throughput
- This deserves more thought to get NASA directed
- Target rich environment